DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 12/17/2010 has been entered.

EXAMINER'S AMENDMENT

2.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Mr. Donald Studebaker on 3/1/2010.

The application has been amended as follows:

Claim 1 (Amended): Apparatus for predicting bone fracture risk in an osteoporotic

patient, comprising:

a Dual X-ray Absorptiometry scanner configured to scan a body area of the patient to

thereby produce a Dual X-ray Absorptiometry image of the body part within said

body area;

an image analysis module configured to perform shape analysis using an Active

Shape Model and to perform texture analysis of the Dual X-ray Absorptiometry image to

thereby generate an image data set representative of aspects of the shape of the body part and the

structure of bone within the body area; and

a data comparison module having a database of comparative data sets from Dual X-

ray Absorptiometry images of control subjects, [for comparison with the image data set

generated from the Dual X-ray Absorptiometry image of the patient] to compare the Active

Shape Model data set generated from the Dual X-ray Absorptiometry image of the patient with

the comparative data sets in the database by examining how the location of landmark points

deviates from a mean co-ordinates of the comparative data sets, to thereby predict the risk of

bone fracture in the patient.

Claim 6 (cancelled)

Claim 10 (Amended) Amended) An apparatus for measuring the progression of a disorder which

affects the shape and/or trabecular structure of bone in a patient, the apparatus comprising:

a Dual X-ray Absorptiometry scanner for scanning a body area of the patient to thereby produce

a Dual X-ray Absorptiometry image of a body part within said body area;

an image analysis module configured to perform shape analysis using an Active Shape Model

and to perform texture analysis of the Dual X-ray Absorptiometry image to thereby generate an

image data set representative of aspects of the shape of the body part and the structure of bone

within the body area; and

a data comparison module comprising a database of comparative data sets from Dual X-ray

Absorptiometry images of control subjects, [for comparison with the image data set generated

from the Dual X-ray Absorptiometry image of the patient] to compare the Active Shape Model

data set generated from the Dual X-ray Absorptiometry image of the patient with the

comparative data sets in the database by examining how the location of landmark points deviates

from a mean co-ordinates of the comparative data sets, to thereby provide a measure of the

progression of the disorder in the patient

Claim 17 (cancelled)

Claim 21 (Amended) An apparatus for predicting a risk of osteoarthritis in a patient, the

apparatus comprising:

a Dual X-ray Absorptiometry scanner for scanning a body area of the patient to thereby produce

a Dual X-ray Absorptiometry image of a body part within said body area;

an image analysis module configured to perform shape analysis using an Active Shape Model

and to perform texture analysis of the Dual X-ray Absorptiometry image to thereby generate an

image data set representative of aspects of the shape of the body part and the structure of bone

within the body area; and

a data comparison module comprising a database of comparative data sets from Dual X-ray

Absorptiometry images of control subjects, [for comparison with the image data set generated

from the Dual X-ray Absorptiometry image of the patient] to compare the Active Shape Model

data set generated from the Dual X-ray Absorptiometry image of the patient with the

comparative data sets in the database by examining how the location of landmark points deviates

from a mean co-ordinates of the comparative data sets, to thereby predict the risk of

osteoarthritis in the patient.

Claim 26(Cancelled)

Claim 30 (Amended): The apparatus for measuring non-pathological changes in a subject

associated with age, gender, body mass index and/or genetics, the apparatus comprising:

a Dual X-ray Absorptiometry scanner for scanning a body area of the subject to thereby produce

a Dual X-ray Absorptiometry image of a body part within said body area;

an image analysis module configured to perform analysis using an Active Shape Model shape

and to perform texture analysis of the Dual X-ray Absorptiometry image to thereby generate an

image data set representative of aspects of the shape of the body part and the structure of bone

within the body area; and

a data comparison module comprising a database of comparative data sets from Dual X-ray

Absorptiometry images of control subjects, [for comparison with the image data set generated

from the Dual X-ray Absorptiometry image of the patient] to compare the Active Shape Model

data set generated from the Dual X-ray Absorptiometry image of the patient with the

comparative data sets in the database by examining how the location of landmark points deviates

from a mean co-ordinates of the comparative data sets, to thereby provide a measure of said non-

pathological changes

Claim 35 (Cancelled)

Claim 39 (Amended): The apparatus for quantifying deformation of a proximal femur of a

patient, the apparatus comprising:

a Dual X-ray Absorptiometry scanner for scanning a body area of the patient to thereby produce

a Dual X-ray Absorptiometry image of a body part within said body area;

 an image analysis module configured to perform shape analysis using an Active Shape Model

and to perform texture analysis of the Dual X-ray Absorptiometry image to thereby generate an

image data set representative of aspects of the shape of the body part and the structure of bone

within the body area; and a data comparison module comprising a database of comparative data

sets from Dual X-ray Absorptiometry images of control subjects, [~~for comparison with the image~~

~~data set generated from the Dual X-ray Absorptiometry image of the patient~~] to compare the

Active Shape Model data set generated from the Dual X-ray Absorptiometry image of the patient

with the comparative data sets in the database by examining how the location of landmark points

deviates from a mean co-ordinates of the comparative data sets, to thereby quantify deformation

of the proximal femur.

Claim 41 (Cancelled).

Allowable Subject Matter

3.   Claims 1-4, 7-15, 18-24, 27-33, 36-39, 42-44 (now renumbered claims 1-34) are allowed.

The following is an examiner's statement of reasons for allowance: The combination of cited

references Mazzess et al (WO 94/06351), Giger et al (US 5,931,780) and Lang et al (US

2005/0010106)do not teach or suggest the features of claims 1, 10,21,30, and 29 the use of DXA

technique by " *comparing the Active Shape Model data set generated from the Dual X-ray*

Absorptiometry image of the patient with the comparative data sets in the database by examining

how the location of landmark points deviates from a mean co-ordinates of the comparative data

sets" . No other found prior art of record teaches or fairly suggests the combination of claimed

elements.

The Examiner finds no reason or motivation to combine the above references in an obviousness

rejection thus placing the application in condition for allowance.

4.   Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041.

The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nancy Bitar/
Examiner, Art Unit 2624

/WESLEY TUCKER/

Primary Examiner, Art Unit 2624